



Drunken Lamb Disease: Recognizing a Hidden Metabolic Disorder in Young Lambs

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The neonatal period is one of the most critical stages in sheep production, during which metabolic disorders can develop rapidly and threaten lamb survival. Among these, Drunken Lamb Disease is an uncommon but important condition that affects healthy, fast-growing lambs during the first two weeks of life. Unlike infectious diseases, this disorder results from metabolic acidosis caused by excessive production and absorption of D-lactic acid following overconsumption of milk. Affected lambs suddenly become weak, lose coordination, refuse to suckle and may collapse despite having no fever or diarrhoea. Because the clinical signs resemble neurological disorders or septicemia, the disease is frequently misdiagnosed, leading to unnecessary treatment and avoidable losses. Fortunately, prompt correction of acid-base imbalance and appropriate feeding management usually result in rapid recovery. This article presents a field case in a 10-day-old lamb and discusses the causes, clinical signs and practical management strategies that help veterinarians and sheep farmers recognize and treat this condition successfully.

Keywords: Drunken Lamb Disease, metabolic acidosis, D-lactic acidosis, neonatal sheep, flock health

A Sudden Illness in an Apparently Healthy Lamb

Most sheep farmers expect weak or undernourished lambs to become sick. However, Drunken Lamb Disease often affects the healthiest and fastest-growing lambs in the flock, making it particularly surprising and confusing. A 10-day-old lamb was presented to the Veterinary Clinical Complex with a sudden inability to stand and reluctance to suckle. According to the owner, the lamb had been healthy since birth, nursing normally and gaining weight appropriately. During the previous day, it gradually became dull, developed an unsteady gait and finally collapsed. There was no history of diarrhoea, fever, injury or respiratory illness. Clinical examination revealed normal body temperature and hydration, but the lamb showed generalized muscle weakness, loss of the suckling reflex and mild abdominal distension. Heart rate and respiratory rate were within normal limits, indicating that severe systemic infection was unlikely. Considering the age of the lamb, feeding history and characteristic clinical signs, a metabolic disorder rather than an infectious disease was suspected. The findings were consistent with Drunken Lamb Disease, a condition caused by D-lactic acidosis in rapidly growing milk-fed lambs.

Understanding Drunken Lamb Disease

Drunken Lamb Disease is a non-infectious metabolic disorder seen mainly in lambs between 3 and 10 days of age. The disease is characterized by the accumulation of D-lactic acid in the bloodstream, resulting in metabolic acidosis and neurological dysfunction. The name

"Drunken Lamb Disease" originates from the peculiar behaviour of affected lambs. They stagger, sway and appear intoxicated because the acidic environment interferes with normal nerve and muscle function. Although the clinical signs resemble diseases affecting the brain or spinal cord, the underlying problem is metabolic rather than neurological. Unlike septicemia or enteric infections, affected lambs usually remain well-nourished and adequately hydrated. They often show no diarrhoea or fever, making diagnosis challenging during the early stages. If recognized promptly, however, the condition responds well to treatment and most lambs recover completely.

Why Does the Disease Develop?

The disorder is closely associated with excessive milk intake. Lambs born as singles or those suckling high-milk-producing ewes often consume more milk than their digestive system can process efficiently. Bottle-fed lambs receiving large quantities of milk at one time are also at increased risk. When excessive amounts of milk enter the gastrointestinal tract, part of the lactose escapes normal digestion and reaches the lower intestine. Here, intestinal bacteria ferment the undigested carbohydrates and produce large quantities of D-lactic acid. Unlike the more common L-lactic acid produced during normal metabolism, D-lactic acid is metabolized slowly by young lambs. As it accumulates in the bloodstream, blood pH falls, producing metabolic acidosis. The acidic environment affects nerve conduction and skeletal muscle function, leading to weakness, loss of coordination and depression of the central nervous system. Because the primary problem is metabolic rather than bacterial, antibiotics alone do not correct the disease. Successful treatment depends on restoring the acid-base balance and temporarily reducing milk intake to prevent continued fermentation.

Clinical Signs

The onset of Drunken Lamb Disease is usually sudden. Lambs that appeared completely normal only a few hours earlier may rapidly develop neurological signs.

Common clinical findings include:

- Reluctance or complete refusal to suckle
- Unsteady gait with swaying or staggering movements
- Weakness of the hind limbs progressing to inability to stand
- Generalized muscle flaccidity
- Depression and reduced responsiveness
- Mild abdominal distension due to fermentation of intestinal contents
- Absence of fever and diarrhoea in most cases
- Loss of suckling reflex in advanced stages
- Lateral recumbency if treatment is delayed

One of the most useful clinical clues is the combination of acute neurological signs in a well-fed lamb without diarrhoea or fever. This helps distinguish the condition from infectious enteritis, septicemia and several neurological diseases.

Diagnosis

Diagnosis of Drunken Lamb Disease is primarily based on the lamb's age, feeding history and characteristic clinical signs. The condition should be suspected in healthy, rapidly growing lambs between 3 and 10 days of age that suddenly develop incoordination, weakness and refusal to suckle without fever or diarrhoea. Clinical examination usually reveals normal body temperature, mild abdominal distension, generalized muscle weakness and loss of the suckling reflex. Since these findings may resemble several infectious and neurological disorders, careful evaluation is essential. Where laboratory facilities are available, blood gas analysis demonstrates metabolic acidosis, characterized by reduced blood pH and decreased bicarbonate concentration. Measurement of blood D-lactate further supports the diagnosis but is not routinely available under field conditions. Therefore, most cases are diagnosed based on history, clinical findings and response to treatment. The major conditions that should be considered before confirming the diagnosis include:

- Neonatal septicemia
- Hypoglycaemia due to starvation
- White muscle disease (selenium and vitamin E deficiency)
- Enterotoxemia (Pulpy Kidney Disease)
- Cerebrocortical necrosis (CCN)

Early diagnosis is important because prompt correction of metabolic acidosis usually results in rapid recovery.

Treatment

The primary objective of treatment is to correct metabolic acidosis, reduce further production of D-lactic acid and provide supportive care until normal gastrointestinal function is restored. Affected lambs should receive intravenous sodium bicarbonate solution to correct the acid–base imbalance. Balanced electrolyte therapy is useful for maintaining hydration and restoring electrolyte balance. If intravenous treatment is not immediately possible, oral electrolyte preparations may be administered in mild cases under veterinary guidance. Milk feeding should be withheld temporarily for about 12–24 hours to prevent continued fermentation of undigested lactose in the intestine. During this period, electrolyte solutions can be offered to maintain hydration. Once the lamb becomes alert and the suckling reflex returns, milk should be reintroduced gradually in small, frequent feedings. Supportive nursing care plays an equally important role. Lambs should be kept warm, dry and protected from environmental stress. Weak lambs may require assisted feeding until they are able to suckle normally. In the reported case, administration of sodium bicarbonate, electrolyte therapy and temporary restriction of milk intake resulted in rapid clinical improvement. The lamb regained its suckling reflex within 24 hours, stood without assistance and resumed normal feeding shortly thereafter. Complete recovery was achieved with continued supportive care.

Prevention

Since Drunken Lamb Disease is closely associated with feeding management, preventive measures are simple and highly effective. Good nutritional management during the neonatal period is the cornerstone of prevention. Lambs should receive adequate amounts of milk without overfeeding. Bottle-fed lambs should be offered small, frequent meals instead of large volumes at long intervals. Similarly, lambs nursing heavy-milking ewes should be monitored carefully to avoid excessive milk consumption. Adequate intake of high-quality colostrum soon after birth supports intestinal health and normal digestive function. Feeding bottles, nipples and other equipment should be cleaned thoroughly to maintain good hygiene and reduce bacterial proliferation. Routine observation during the first two weeks of life is equally important. Lambs that suddenly become dull, stop suckling or develop an unsteady gait should receive immediate veterinary attention before severe metabolic acidosis develops. Simple management practices can greatly reduce the occurrence of this condition and improve lamb survival.

Practical Tips for Sheep Farmers

The following measures help reduce losses due to Drunken Lamb Disease:

- Observe newborn lambs closely during the first two weeks after birth.
- Avoid overfeeding bottle-reared lambs.
- Feed milk in small, frequent quantities.
- Ensure adequate colostrum intake soon after birth.
- Maintain clean feeding equipment and lambing pens.
- Seek veterinary assistance immediately if a lamb becomes weak, staggers or refuses to suckle.

Conclusion

Drunken Lamb Disease is an important metabolic disorder of neonatal lambs that is often overlooked because its clinical signs resemble infectious or neurological diseases. The condition results from excessive production and absorption of D-lactic acid following

overconsumption of milk, leading to metabolic acidosis and neurological dysfunction. The disease is highly treatable when recognized early. Prompt correction of acid–base imbalance, temporary regulation of milk feeding and supportive nursing care usually result in rapid and complete recovery. Delayed diagnosis, however, may lead to serious complications and increased mortality. Awareness among sheep farmers and field veterinarians is essential for reducing neonatal losses. Careful feeding management, regular observation of young lambs and timely veterinary intervention remain the most effective strategies for preventing this condition and maintaining healthy, productive flocks.

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